



## Research Article

# Effects of Olive Leaf Extract on Metabolic Response, Liver and Kidney Functions and Inflammatory Biomarkers in Hypertensive Patients

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## Abstract

**Background and Objective:** Hypertension is a long-term medical condition in which the blood pressure is gradually elevated. In this project, the effects of olive leaf extract (OLE) were evaluated on metabolic response, liver and kidney functions and also biomarkers of inflammation in hypertensive patients. **Materials and Methods:** In this randomized double-blind placebo controlled clinical trial, 60 hypertensive patients, aged 30-60 years old had participated. Patients were randomly assigned into two groups to receive either OLE or placebo tablets for 12 weeks. At the beginning and end of the intervention, metabolic parameters and biomarkers of liver, kidney and inflammation were measured in sera of the participants using available laboratory methods. **Results:** Compared with the placebo, changes in parameters associated with glucose metabolism were not statistically significant ( $p > 0.05$ ). The OLE tablets did not have significant effect on liver enzymes, total protein, albumin, urea and creatinine ( $p > 0.05$ ), but significantly decreased interleukin-6, interleukin-8 and tumor necrosis factor alpha as inflammatory biomarkers ( $p < 0.05$ ) in OLE group compared to the placebo group. **Conclusion:** The results concluded that inflammation as a major cause of hypertension was significantly decreased in patients using OLE tablets.

**Key words:** Olive leaf extract, essential hypertension, tumor necrosis factor-alpha, hypertensive patients, cardiovascular disease, interleukin, blood pressure

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**Competing Interest:** The authors have declared that no competing interest exists.

**Data Availability:** All relevant data are within the paper and its supporting information files.